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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,128	09/22/2003	Michael E. Thomas	H0003933-US	5400
21567	7590	04/07/2005	EXAMINER	
WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201			SHEEHAN, JOHN P	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/665,128	Applicant(s) THOMAS ET AL.	
	Examiner John P. Sheehan	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 42 is/are pending in the application.
- 4a) Of the above claim(s) 10-12, 16, 18, 19, 21-23, 26 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13-15, 17, 20, 24, 25 and 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims 10 to 12, 16, 18, 19, 21 to 23, 26 and 27 drawn to an invention nonelected with traverse in the response submitted September 9, 2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Interpretation

2. In the remarks submitted January 4, 2005, applicants disagree with the Examiner's interpretation of the claims as previously set forth, stating that:

Applicant notes however, that the requirement that a base metal be present in an amount of at least 50% by weight as set forth by the Examiner, is in direct contrast with applicant's specification at paragraph 13 which indicates that an M-base alloy has a majority element M which can be present at less than 50% provided that no other element is present at a greater concentration. (applicants' remarks, page 8, second paragraph, emphasis added by the Examiner)

In view applicants' remark the Examiner would like to repeat and elaborate regarding his interpretation of the claims as set forth in the previous Office action.

1. As previously state by the Examiner, none of applicants' claims recite proportions, but rather with respect to composition require only two or more elements selected from Groups 1, 5, 6, 8, 9 and 10 of the periodic table. Thus, regarding the

Art Unit: 1742

composition, the claims encompass any and all combinations of elements selected from groups I, 5, 6, 8, 9, and 10 of the periodic table, that is, any and all combinations of the 24 elements in groups I, 5, 6, 8, 9, and 10 of the periodic table. This myriad of alloy combinations includes, but is not limited to compositions having a base metal, that is, alloy compositions wherein an element is present in an amount of 50% by weight or more and also alloy compositions wherein there is no base metal, that is, there is no metal present in an amount of 50% by weight or more. Accordingly, in view of the lack of composition proportions the claims encompass embodiments wherein:

(1) There is one element as a base metal, that is, a metal present in an amount of 50% by weight or more, selected from groups I, 5, 6, 8, 9, and 10 of the periodic table combined with at least additional element selected from groups I, 5, 6, 8, 9, and 10 of the periodic table, hence Groups I to XXI of the election requirement, wherein each of the groups is directed to a different base metal; and

(2) There is no base metal, that is there is no metal present in an amount of 50% by weight or more, and the claims encompass any combination of at least two elements selected from groups I, 5, 6, 8, 9, and 10 of the periodic table, hence Group XXII of the election requirement.

The Examiner would like to emphasize that he is not stating that the claims require a base metal, that is a metal present in an amount of 50% or more by weight, but rather the Examiner is interpreting the claims to encompass, that is, the claims include among the claimed embodiments the embodiment wherein there is a base metal, that is, a

Art Unit: 1742

metal that is present in an amount of 50% by weight or more. This interpretation of the claims by the Examiner **is consistent** with applicants' specification, for example see page 5, paragraph 0013 of the applicants' specification.

The Examiner hopes that this explanation clarifies the Examiner's interpretation of the claims.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 42 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- I. Regarding new claim 42, the claim language, "wherein the component has no single element present at an amount exceeding 95%, by weight " does not find support in the specification, as filed, and therefore is considered to be new matter. Applicants have cited paragraphs 13, 14, 39, 64 and 78 in the specification as support for this amendment. The Examiner does not agree in that none of the cited paragraphs in the specification teach the

limitation, "wherein the component has no single element present at an amount exceeding 95%, weight " recited in new claim 42, MPEP 2163.05, Section III.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 to 7, 9, 13, 14, 17, 20, 24 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Schussler et al. (Schussler, US Patent No. 3,592,639).

Schussler teaches a single phase tantalum based alloy containing tungsten (Abstract of the Disclosure and column 1, line 71). Schussler teaches a specific example alloy containing, in addition to tantalum and tungsten, columbium (niobium), hydrogen, molybdenum, cobalt, iron, vanadium, nickel and chromium (column 3, lines 40 to 60). The tungsten, columbium (niobium), hydrogen, molybdenum, cobalt, iron, vanadium, nickel and chromium of Schussler's example alloy are all encompassed by the applicants' claims language,

two or more elements in elemental form;
each of the two or more elements being
selected from groups 1, 5, 6, 8, 9 and 10
of the periodic table.

Applicants' claimed invention does not distinguish over Schussler.

3. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Dohjo et al. (US Patent No. 5,170,244).

Dohjo teaches specific examples of tantalum based sputtered films containing molybdenum (columns 5 and 6, the Table).

Claim Rejections - 35 USC § 102/103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8 and 15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Schussler.

Schussler teaches as set forth above. Further, Schussler teaches that the disclosed alloy is worked down to a thickness of 0.01 to 0.02 inches (column 4, lines 31 to 39). Such an alloy thickness is encompassed by the alloys films recited in applicants' claims 8 and 15.

The claims and the references differ in that the references do not teach the process step of "sputter-deposited" recited in the claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the process step recited

in applicants' product by process claims does not necessarily lend patentability to the claimed product, MPEP 2113.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695,698,227 USPQ 964,966 (Fed. Cir.1985).

It is noted that the use of a rejection under 35 USC 102/103 for product by process claims as set forth above has been approved by the courts, see MPEP 2113.

"[T]he lack of physical description in a product-by-process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown*, 459 F.2d 531,535,173 USPQ 685,688 (CCPA 1972).

Response to Arguments

7. Applicant's arguments filed January 4, 2005 have been fully considered but they are not persuasive.

Regarding the rejection of claims 1 to 7, 9, 13, 14, 17, 20, 24 and 25 under 35 USC 102 based on Schussler, applicants' argue that "Schussler does not disclose the claim 1 recited sputtering surface, the recited solid solution or the solution of two or more elements in elemental form." The Examiner is not persuaded. Applicants have not distinctly and specifically pointed out why the claim language, "sputtering surface" is considered to distinguish over Schussler's alloy. For example, how does the term "sputtering surface" recited in applicants' claims distinguish applicants' claimed invention from Schussler's alloy? In response to applicants' argument that Schussler does not teach a "solid solution of two or more elements in elemental form", the Examiner points out that Schussler teaches a tantalum based alloy-containing tungsten. As is known in the art as demonstrated by the ASM Handbook (page 375, the Ta-W phase diagram) and Hansen (page 1226, under the heading "Ta-W Tantalum-Wolfram", lines 1 to 3) tantalum alloys containing tungsten form solid solutions in all proportions. Further, these teachings aside, the alloy composition taught by Schussler is single phase as is the applicants' claimed invention and the composition of Schussler's alloy is encompassed by the composition recited in applicants' claims. In view of this, one would expect that Schussler's alloy would possess all the same properties as applicants' claimed alloy, including the property of being a solid solution, In re Best, 195 USPQ, 430 and MPEP 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same,

the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

Applicants' argument that Schussler does not suggest a sputtering surface, the recited solid solution or the solution of two or more elements in elemental form is not persuasive in that applicants have not supported their allegation with any arguments, reasoning, evidence, etc.

Regarding the rejection of claim 8 in view of Dohjo, applicants argue that Dohjo fails to disclose the claim 8 recited single phase solid solution. The Examiner is not persuaded. In view of Dohjo's discussion at column 6, lines 59 to 68 regarding an Mo-Ta film having a tetragonal type structure or a body-centered cubic type structure and the X-ray diffractions having a essentially a single peak as shown in Figures 9A and 9B Dohjo's film appears to be single phase as recited in applicants' claim 8.

Regarding the rejection of claims 8 and 15 in view of Schussler applicants argue that as argued with respect to the rejection under 102 based on Schussler, Schussler does not teach every feature recited in independent claim 1. Applicants also argue that, "Nor does Schussler teach or suggest the claims 8 and 15 recited film comprising a single phase solid solution". This is not persuasive for the reasons set forth above in the first 2 paragraphs under the heading Response to Arguments. Further, as set forth in the statement of the rejection, Schussler's alloy is a single phase alloy (Abstract of the Disclosure and column 1, line 71). There is no reason to believe nor have applicants advanced any reasons to believe that Schussler's alloy loses this

characteristic of being single phase during processing down to a thickness of 0.01 to 0.02 inches (column 4, lines 31 to 39).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

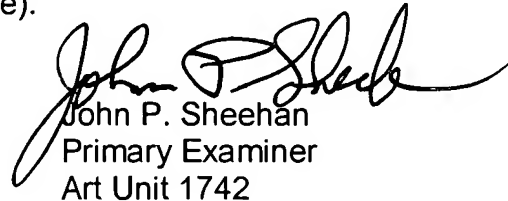
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (6:45-4:30) Second Monday Off.

Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John P. Sheehan
Primary Examiner
Art Unit 1742

jps